

GOING DIGITAL

8 15
READABILITY BASED ON FLESH-KINCAID SCORES

FOG INDEX

» Digital airborne communications will soon replace the antiquated systems of the past.

JARGON WATCH

» **OSA/VIP/SAM:** Operational Support Aircraft/Very Important Person/Special Airlift Mission
» **CSO:** Communications Systems Operator
» **IP:** Internet Protocol

FUTURE OF FLIGHT

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SCOTT AIR FORCE BASE, ILL. — Communication technology has come a long way since the pre-dial tone telephone network of the 1950s.

This generation now thinks in terms of e-mails and text messages vs. hard copy memoranda and the fax machines that sent them. Everything is instantaneous, efficient, and fully integrated with the network.

But, one place where communication technology lags behind is in the airborne arena. This is due to the high cost of modifying aircraft and manufacturing flight-worthy networking equipment. **Airborne networking is advancing in the same direction as the terrestrial network, however, it's just moving a bit slower.** This gives communicators the unique advantage of foresight. They know what's coming down the pike and can prepare for it. That is specifically what the Integration Engineering directorate here at AFCA is doing.

Because the terrestrial network has made the shift toward digital networking systems that allow for better communications, the Air Force knows how to prepare for what is coming to the aircraft next.

Currently, users who are riding

onboard the Operational Support Aircraft/Very Important Person Special Airlift Mission Fleet communicate through their own dedicated, analog link to the ground.

These individual links are difficult to maintain and easily lost. Also, the traffic that can be sent over these links is limited because they are narrowband channels and primarily analog. **In the very near future, airborne customers will be able to do so much more than have analog phone conversation**

and fax. Once the shift is made from many narrowband communication pipes to one, ubiquitous, Internet Protocol-based connection to the ground, users will be able to pass data off of the aircraft akin to how they communicate when they are on the ground. Also, the type of data will not be restricted to basic phone and fax services. **IP-based communications can be anything, including integrated data, voice and video-over-IP that can be digitally encrypted for greater communications security.**

One of the biggest challenges with integrating digital communications onboard these aircraft is managing the different communications systems that are onboard each individual plane.

Currently, each plane in the OSA/VIP/SAM fleet has one or more Communications Systems

Operators who manually monitor phone calls for quality, switch out communications links that have gone down with new ones and configure the aircraft radios for proper communications.

The goal of future airborne communications is to fully integrate each OSA/VIP/SAM aircraft with the Air Force networks, such as NIPRNET and SIPRNET and to create one IP-based net-centric communications link to the ground that would be able to provide all the services passengers are used to on the ground and at their desks.

By working closely with CSOs from Air Mobility Command, U.S. Strategic Command, the 412th Flight Test Squadron, the 89th Airlift Wing, and the Presidential Airlift Group, engineers here clearly defined the requirements needed to design the CSO station of the future.

The Software Maintenance Group at Hill AFB, Utah, and private-sector communications companies have worked closely with the CSO station design team by designing prototype software and will eventually deliver the prototype hardware solution with an overall goal to create a well defined template. This is so future acquisition programs can all share the standard solution for airborne communication systems management thus creating one standard station for CSOs to learn.

